**ISSN NO 2582-0958** 

# DISTRIBUTION SYSTEM SERVICE PROVIDED BY ELECTRIC VEHICLES

<sup>1</sup>P.ARUN PRAKASH, <sup>2</sup>D.BHARATH, <sup>2</sup>K.PRAKASH RAJ

<sup>1</sup>Assistant Professor, <sup>2</sup>Finalyear Student, Dept. of Computer Science & Engineering Sriram Engineering College, Chennai – 602024, Tamil Nadu, India. getinpraksham@gmail.com, d99bharath@gmail.com, prakeshrajrmd@gmail.com

# **ABSTRACT**

Development of an interactive car sale system which lets a customer to find a car and its details is the main objective of this project.Both the user and the administrators can access enter the details of every car. Administrators are responsible of maintaining the details of vehicles like the Manufacturer information, Year, Model, Price, and Kilometers traveled. The system's main functions include: i. Signing in and log in functionality, ii. Customers can look up various cars listing with details included, iiiUser may select and add products to shopping cart...iv. Loan Application, v. Warranty option form, vi. Sale application, vii. Insurance form and application & viii Applicant credit application.

The system provides a search algorithm which enables the user to find a car with all details displayed matching the car model. Users can also view the information of vehicles purchased and their particulars. Menu's and toolbars are part of the excellent user inter face implemented in the project.

**INDEX TERM:** Distribution systems, distribution system services, electric vehicles, renewable energy sources, services classification, smart grids.

## 1.INTRODUCTION

Electric Vehicle management system is automation software program for the transportation industry or a corporation which owned a massive wide variety of vehicle & managing fleet. It is a prepared code which provides management features that permit companies to remove or minimize the dangers related to vehicles. It allows a commercial enterprise to boost up some outstanding criteria consists of the everyday management of vehicles, services control, HRM device, tracking & handling inventory, Cost control etc. Having the capacity to supply glorious reviews at any situation, it involves with auditing, formulating Technique, making strategy and imposing policies, tactics and structures etc. taken into consideration a fast and immediately forward project while you're using ultimate Electric Vehicle Management software device.

#### 2. RELEATED WORK

Current system is a manual one in which customer has to submit their details for vehicle's sale or service. Customer has to follow up regularly with vehicle owner to know the status of their requests which is time consuming and hectic. Here we are going to discuss the existing systems and other drawbacks in the manual earlier system of registration of the vehicles. The system we are using an i.e. manual system of the registration of the vehicles is very tiresome and time-consuming. It takes a lot of time and going there in offices, lining up in queues. The most common problem knows the proper information about the documents and procedure and pricing. Here comes the problem of agents in that where they make huge money, of no way of the hard earned money of poor people.

# DRAWBACKS OF EXISTING SYSTEM

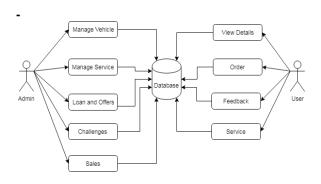
- Time-consuming Problem.
- Only One Person is work at a time.
- Difficult to Work for buy Time Duration.
- More papers are availed.



## 3. PROPOSED METHODOLGY

Electric Vehicle management system is automation software for the transportation industry or an organization which owned a large number of vehicle & managing fleet. It is an organized code which provides management functions that permit corporations to get rid of or minimize the risks related to vehicles. It helps a business to boost up some outstanding criteria includes the daily management of vehicles, services management, HRM system, tracking & managing inventory, Cost management etc. Having the ability to supply glorious reports at any situation, it involves with auditing, formulating technic, making strategy and implementing policies, procedures and systems etc. are considered a fast and straight forward task while you are using ultimate Electric Vehicle Management software system.

# 3.1 ARCHITECTURE

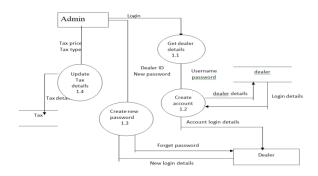


# **OBJECTIVE MODULES**

- 1. Admin
- 2. Dealer
- 3. Customer
- 4. Vehicle
- 5. Sales Manager

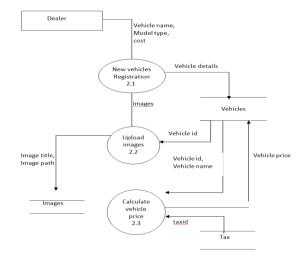
#### **3.2 ADMIN**

Admin can get log in with valid username and password. Admin can view all registered dealer details. Admin can upload vehicle information like Vehicle name, Manufacture Year, Model Color, Cost.



## 3.3 DEALER

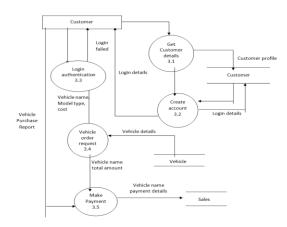
The dealer needs to register with the application to get unique username and password. The dealer can enter into the application with valid username and password. Dealer representatives work with customers to find what they want, create solutions and ensure a smooth sales process. Dealer will work to find new sales leads, through business directories, client referrals, etc.



#### 3.4 CUSTOMER

Customer needs to register with the application to get unique username and password. The customer can get log in with valid username and password. Customer views Vehicles and sends a request to sales manager for cost and delivery date. The customer can view sales manager response at any time.





## 3.5 VEHICLE

A vehicle needs to register in the website for the customer the vehicle details can see by the Admin, Customer, & Sales Manager. The Customer can view vehicle information like Vehicle name, Manufacture Year, Model Color, Cost.

#### 3.6 SALES MANAGER

Sales manager need to oversee an organization sale polices, objectives and initivates. A sales manager can get log in with valid username and password. Set short-term and long-term sales strategies and evaluate effectiveness of current sales program. Sales Manager can view customer requests and send vehicle cost and delivery date.

## 4. CONCLUSION

This paper presented a review of the recent literature focusing on distribution system services provided by EVs (EV-DSS). It was found that there is not an agreement regarding the classification of the services provided by EVs for DSOs, which could be because of the novelty of the concept at the distribution level; therefore, a new classification of EV-DSS was proposed, including three main categories: active power support, reactive power support, and renewable energy source (RES) integration support. A description of the services, basic formulations, and the main contributions of the reviewed papers were presented. This information provided an overview of the traditional methods and allowed us to identify weaknesses in the control strategies as a means to encourage exploring new ones, aligned with the current requirements for the realistic implementation of services from EVs for DSOs. Additionally, a comparison framework of the work developed in the academic research with a real-life application of EV services using a specific case of frequency regulation service was proposed. Using the proposed framework, it is possible to assess the implement ability of EV-DSS, i.e., how far the EV-DSS are from being implemented, and the stackability of the EV-DSS, i.e., how easily EV-DSS services can be combined with frequency regulation and other potential services.

## Reference

- M. S. Kumar and S. T. Revankar, "Development scheme and key technology of an electric vehicle: Anoverview," Renew. Sustain. Energy Rev., vol. 70, pp. 1266– 1285, Apr. 2017.
- 2. J. Xiong, K. Zhang, Y. Guo, and W. Su, "Investigate the impacts of PEV charging facilities on integrated electric distribution system and electrified transportation system," IEEE Trans. Transp. Electrific., vol. 1, no. 2, pp. 178–187, Aug. 2015.
- 3. K. Zafred, J. Nieto-Martin, and E. Butans, "Electric vehicles-effects on domestic low voltage networks," in Proc. IEEE Int. Energy Conf. (ENERGYCON), Apr. 2016, pp. 1–6.
- J. Quirós-Tortós, L. F. Ochoa, S. W. Alnaser, and T. Butler, "Control of EV charging points for thermal and voltage management of LV networks," IEEE Trans. Power Syst., vol. 31, no. 4, pp. 3028–3039, Jul. 2016.
- 5. H. N. T. Nguyen, C. Zhang, and M. A. Mahmud, "Optimal coordination of G2V and V2G to support power grids with high penetration of renewable energy," IEEE Trans. Transport. Electrific., vol. 1, no. 2, pp. 188–195, Aug. 2015.
- E. Akhavan-Rezai, M. F. Shaaban, E. F. El-Saadany, and F. Karray, "Managing demand for plug-in electric vehicles in unbalanced LV systems with photovoltaics," IEEE Trans. Ind. Informat., vol. 13, no. 3, pp. 1057–1067, Jun. 2017.
- 7. R. A. Kordkheili, B. Bak-Jensen, J. R. Pillai, M. Savaghebi, and J. M. Guerrero, "Managing high penetration of renewable energy in MV grid by electric vehicle storage," in Proc. Int. Symp. Smart Electr.



- Distrib. Syst. Technol. (EDST), Sep. 2015, pp. 127–132.
- E. Akhavan-Rezai, M. F. Shaaban, E. F. El-Saadany, and F. Karray, "Managing demand for plug-in electric vehicles in unbalanced LV systems with photovoltaics," IEEE Trans. Ind. Informat., vol. 13, no. 3, pp. 1057–1067, Jun. 2017.
- R. A. Kordkheili, B. Bak-Jensen, J. R. Pillai, M. Savaghebi, and J. M. Guerrero, "Managing high penetration of renewable energy in MV grid by electric vehicle storage," in Proc. Int. Symp. Smart Electr. Distrib. Syst. Technol. (EDST), Sep. 2015, pp. 127–132.
- J. Lin, J. J. Yu, K.-C. Leung, and V. O. Li, "Optimal scheduling with vehicle-to-grid ancillary services," Energy Syst. Electr. Hybrid Vehicles, vol. 2, p. 395, Aug. 2016.
- 11. C. Le Floch, E. C. Kara, and S. Moura, "PDE modeling and control of electric vehicle fleets for ancillary services: A discrete charging case," IEEE Trans. Smart Grid, vol. 9, no. 2, pp. 573–581, Mar. 2018.
- 12. M. Hou, Y. Zhao, and X. Ge, "Optimal scheduling of the plugin electric vehicles aggregator energy and regulation services based on grid to vehicle," Int. Trans. Elect. Energy Syst., vol. 27, no. 6, pp. 1–12, 2017.
- S. I. Vagropoulos, D. K. Kyriazidis, and A. G. Bakirtzis, "Realtime charging management framework for electric vehicle aggregators in a market environment," IEEE Trans. Smart Grid, vol. 7, no. 2, pp. 948–957, Mar. 2016.
- N. Shaukat et al., "A survey on electric vehicle transportation within smart grid systemRenew. Sustain. Energy Rev., vol. 81, pp. 1329– 1349, Jan. 2018.

- 14. J. Tomic and W. Kempton, "Using fleets of electric-drive vehicles for grid support," J. Power Sources, vol. 168, pp. 459–468, Jun. 2007.
- 15. G. Wenzel, M. Negrete-Pincetic, D. E. Olivares, J. MacDonald, and D. S. Callaway, "Real-time charging strategies for an electric vehicle aggregator to provide ancillary services," IEEE Trans. Smart Grid, vol. 9, no. 5, pp. 5141–5151, Sep. 2018
- K. Knezovi´c, M. Marinelli, P. Codani, and Y. Perez, "Distribution grid services and flexibility provision by electric vehicles: A review of options," in Proc. 50th Universities Power Eng. Conf., Sep. 2015, pp. 1–6.
- 17. J. Hu, H. Morais, T. Sousa, and M. Lind, "Electric vehicle fleet management in smart grids: A review of services, optimization and control aspects," Renew. Sustain. Energy Rev., vol. 56, pp. 1207–1226, Apr. 2016.
- 18. S. Sarabi, A. Davigny, V. Courtecuisse, Y. Riffonneau, and B. Robyns, "Potential of vehicle-to-grid ancillary services considering the uncertainties in plug-in electric vehicle availability and service/localization limitations in distribution grids," Appl. Energy, vol. 171, pp. 523–540, Jun. 2016.
- 19. K. M. Tan, K. V. Ramachandaramurthy, and J. Y. Yong, "Integration of electric vehicles in smart grid: A review on vehicle to grid technologies and optimization techniques," Renew. Sustain. Energy Rev., vol. 53, pp. 720–732,-Jan,2016.



16